

system downloads an applet written in a first Java version. (*Id.*, col. 2, ll. 23–27.) The applet includes a call to a second Java version object class. (*Id.*) When a client requests the applet, the server downloads the applet with a class interface to the client. (*Id.*, col. 2, ll. 29–33.) The applet is executed in a JVM located on the client and calls the second Java version object class. (*Id.*, col. 2, ll. 33–35.) The class interface verifies that each downloaded second Java version object class is identified by the loader within the JVM. (*Id.*, col. 2, ll. 36–44.) *Marchesseault* may automatically activate the applet based on one or more events (e.g., activating a link, downloading an HTML page, etc.) (*Id.*, col. 4, ll. 16–19.)

Ohtsuki

Ohtsuki discloses a virtual machine system including a main storage, which is allocated to a plurality of virtual machines. (*Ohtsuki*, col. 2, ll. 10–26.) The system also includes a system controller, which includes a registration table. (*Id.*, col. 2, ll. 27–29.) The registration table registers a correspondence between instruction processors and virtual machines such that operation of one real instruction processor only influences another real instruction processor assigned to the same virtual machine. (*Id.*, col. 2, ll. 30–45.) This avoids invalidation of a buffer storage and instruction processors. (*Id.*, col. 4, ll. 26–57.)

Rejection of claims 5–9 and 14–17

Claim 5 recites:

A distributed computer system comprising:

a first virtual machine;

a second virtual machine executing a process that receives, from the first virtual machine, a registration of interest in an event and transmits a message in response to the event, the

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registration of interest and the message including computer code; and

a third virtual machine for receiving the message and executing the computer code.

The Examiner alleges *Marchesseault's* claim 24 discloses, "a second virtual machine executing a process that receives, from the first virtual machine, a registration of interest in an event and transmits a message in response to the event, the registration of interest and the message including computer code," as recited in claim 5. Yet *Marchesseault* does not teach a "registration of interest in an event." Instead, *Marchesseault* merely discloses a system for downloading an applet, which may be automatically activated upon the loading of an HTML page by a web browser, the activation of a hyper-link, or other user actions. The downloading and activation of applets are not the same as the registration of interest in an event, as recited in claim 5. Further, *Marchesseault* and *Ohtsuki* alone or in combination fail to teach or suggest a second virtual machine that "transmits a message in response to the event, . . . the message including computer code" or "a third virtual machine for receiving the message and executing the computer code," as also recited in claim 5. Additionally, the Examiner cited no portion of either reference as allegedly disclosing these recitations of the claim. At most, the Examiner alleges,

Ohtsuki implicitly indicates an information processing system which includes of real instruction processors and a main storage allocated to several virtual machines in such a manner that a virtual machine system thus implemented comprises a plurality of virtual machines each including the same number of instruction processors as that of the real instruction processor(s) assigned therewith the main storages of the individual virtual machines including consecutive storage regions of the real main storage allocated to the virtual machines; which is readable as a

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second virtual machine executing a process that receives;
and a third virtual machine, (see col. 2, lines 11-26).

(May 22, 2003 Office Action, at 5.) Without agreeing with the Examiner's characterization of *Ohtsuki*, the Examiner merely alleges that *Ohtsuki* discloses "a second virtual machine executing a process that receives; and a third virtual machine." Claim 5, on the other hand, recites, *inter alia*, "a second virtual machine *executing a process that receives*, from the first virtual machine, *a registration of interest in an event and transmits a message in response to the event, the registration of interest and the message including computer code*," and "a third virtual machine *for receiving the message and executing the computer code*." (Emphasis added.) Even assuming, *arguendo*, that *Ohtsuki* discloses or suggests "a first virtual machine," "a second virtual machine," and "a third virtual machine," this ignores the functional relationships between these elements, as recited in the claim. Accordingly, *Ohtsuki* also fails to teach or suggest the recitations of claim 5, as alleged by the Examiner.

Applicants also disagree that there is motivation to combine *Marchesseault* with *Ohtsuki*. According to the Examiner, "This modification would allow the teachings of *Ohtsuki* to improve the accuracy and reliability of the method and apparatus for transporting behavior in an event based distribution system, and provide a plurality of operating systems to run on an information processing system (see [*Ohtsuki*,] col. 1, lines 11-13)." (May 22, 2003 Office Action, at 5.) Applicants disagree. *Ohtsuki* discloses a virtual machine system that includes a plurality of instruction processors and a main storage allocated to several virtual machines to minimize invalidation entries that occur when multiple virtual machines share a main storage. (*Ohtsuki*, col. 1, ll. 26-35 and col. 2, ll. 10-25.) As explained, *Marchesseault* is directed toward a multi-version

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applet/JVM system. Neither *Ohtsuki* nor *Marchesseault*, however, provide motivation to implement a system for allowing multiple Java versions to run on a single virtual machine (as disclosed in *Marchesseault*) in a system including multiple virtual machines (as disclosed in *Ohtsuki*). Although the Examiner alleges combination of *Ohtsuki* with *Marchesseault* improves “accuracy and reliability,” there is nothing in either reference to support this assertion.

Because the proposed combination of *Ohtsuki* and *Marchesseault* fails to disclose or suggest the recitations of claim 5 and neither reference provides implicit or explicit motivation to support the proposed combination, there can be no expectation of achieving the combination asserted by the Examiner. Accordingly, Applicants request that the rejection of claim 5 be withdrawn and the claim allowed.

Claims 6–9 and 14–17 depend from claim 5. As explained, claim 5 is distinguishable from *Marchesseault* and *Ohtsuki*. Accordingly, claims 6–9 and 14–17 are also distinguishable from these references for at least the same reasons set forth in connection with claim 5. Therefore, Applicants request the rejection of these claims be withdrawn and the claims allowed.

Rejection of claim 18

Claim 18 recites:

A distributed computer system comprising:

a first virtual machine for transmitting a registration of interest in an event, the registration including computer code;

a second virtual machine for transmitting a message including the computer code in response to the event; and

a third virtual machine for executing the computer code transmitted in the message.

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Although the Examiner states that claim 18 is rejected under § 103(a) as unpatentable over *Marchesseault* in view of *Ohtsuki*, the Examiner does not apply either reference to claim 18. Accordingly, Applicants assume the claim is allowable over the prior art. Applicants request confirmation of the status of claim 18 in the next communication from the Examiner.

Notwithstanding the allowability of claim 18, Applicants submit claim 18 is allowable for at least the reasons given above with respect to claim 5. For instance, *Marchesseault* and *Ohtsuki* fail to disclose or suggest, “a first virtual machine for transmitting a registration of interest in an event, the registration including computer code,” “a second virtual machine for transmitting a message including the computer code in response to the event,” and “a third virtual machine for executing the computer code transmitted in the message,” as recited in claim 18. Because the references fail to disclose or suggest each claim element, there can be no expectation of success in achieving the claimed combination. Further, neither reference provides motivation to combine the references. Accordingly, the Examiner failed to establish a prima facie case of obviousness in rejecting claim 18 over these references. Applicants request that the rejection of this claim be withdrawn and the claim allowed.

Rejection of claim 20

Claim 20 recites:

A method for executing computer code in a distributed computer system comprising:

receiving from a first virtual machine a registration of interest in an event, the registration including computer code;

transmitting from a second virtual machine a message including the computer code in response to the event; and

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executing on a third virtual machine the computer code transmitted in the message.

Although the Examiner states that claim 20 is rejected under § 103(a) as unpatentable over *Marchesseault* in view of *Ohtsuki*, the Examiner does not apply either reference to claim 20. Accordingly, Applicants assume the claim is allowable over the prior art. Applicants request confirmation of the status of claim 20 in the next communication from the Examiner.

Notwithstanding the allowability of claim 20, Applicants submit claim 20 is allowable for at least the reasons given above with respect to claim 5. For instance, *Marchesseault* and *Ohtsuki* fail to disclose or suggest, "receiving from a first virtual machine a registration of interest in an event, the registration including computer code," "transmitting from a second virtual machine a message including the computer code in response to the event," and "executing on a third virtual machine the computer code transmitted in the message," as recited in claim 20. Because the references fail to disclose or suggest each claim element, there can be no expectation of success in achieving the claimed combination. Further, neither reference provides motivation to combine the references. Accordingly, the Examiner failed to establish a prima facie case of obviousness for rejecting claim 20 over these references. Applicants request that the rejection of this claim be withdrawn and the claim allowed.

Rejection of claim 21

Claim 21 recites:

A method for sending event notifications in a system comprised of at least two entities, the method comprising:

providing, by a first one of the entities to a second one of the entities, a message including a registration object characterized as an object having closure;

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the second entity using the message to register an interest to notify an entity upon occurrence of an event;

monitoring by the second entity for occurrence of the event;
and

providing by the second entity to another entity a notification upon occurrence of the event,

whereby the first entity is not aware of functions available to the entity provided with the notification due to the closure of the registration object.

According to the Examiner:

As per claim 21, in addition to the discussion in claim 5, Marchesseault further teaches a message including a registration object characterized as an object having closure (thus, wherein the application includes at least one call to an object class of a second version of the runtime system; which is equivalent to a message including a registration object characterized as an object having closures)(see [Marchesseault,] col. 2, lines 4-6) whereby the first entity is not aware of functions available to the entity provided with the notification due to the disclosure of the registration object (thus, each downloaded second Java version object class is identified by the loader within the Java Virtual Machine, the existence in the class interface of a respective identifier for each downloaded second Java version object class is verified, the downloaded applet is then executed within the Java Virtual Machine without causing error conditions by any calls to second Java versions object classes not identified within the downloaded class interface are not allowed; which is readable as whereby the first the first entity is not aware of functions available to the entity provided with the notification due to the disclosure of the registration object (thus, each downloaded second Java version object class is identified by the loader within the Java Virtual Machine the existence in the class interface of a respective identifier for each downloaded second Java version object class is verified, the downloaded applet is then executed within the Java Virtual Machine without causing error conditions by any class to second Java version object classes having a respective identified in the class interface, calls to second Java version object classes not identified within the downloaded class

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interface are not allowed)(see [*Marchesseault*,] col. 2, lines 36-45).

(May 22, 2003 Office Action, at 7-8). Applicants disagree with the Examiner's characterization of *Marchesseault*, which merely discloses a system for allowing multiple Java versions to run on a single virtual machine. Moreover, the Examiner does not address the steps of, "the second entity using the message to register an interest to notify an entity upon occurrence of an event," "monitoring by the second entity for occurrence of the event," or "providing by the second entity to another entity a notification upon occurrence of the event," as recited in claim 21.

Because neither reference teaches or suggests each claim recitation, there can be no finding of obviousness of claim 21 in view of the cited references. Further, as explained with respect to claim 5, *Marchesseault* with *Ohtsuki* fail to provide a suggestion that motivates one skilled in the art to combine the references to teach Applicants' claimed invention. Accordingly, Applicants request the rejection of claim 21 be withdrawn and the claim allowed.

Rejection of claim 22

Claim 22 recites:

A computer object configured to operate on a machine,
wherein the computer object comprises:

a method; and

parameter data corresponding to the method, wherein:

the method and parameter data are adapted to be passed to
a machine as part of an event registration message,

the event registration message further includes event
information identifying the event of interest and software
information identifying a software entity to be notified upon
occurrence of the event, and

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upon occurrence of the event, the method and parameter data execute to pass at least one of the computer object and reference to the computer object to the software entity.

The Examiner alleges:

As per claim 22, in addition to the discussion in claim 5, Marchesseault further teaches the event registration message further includes event information identifying the event of interest and software information identifying a software entity to be notified upon occurrence of the event (thus, verifying that each identified object class associated with the second Java version of the Java Virtual Machine has a respective identifier in the class interface; which is readable as an event information identifying the event of interest and software information identifying a software entity to be notified upon occurrence of the event)(see col. 14, lines 4-7), and

upon occurrence of the event, the method and parameter data execute to pass at least one of the computer object and reference to the computer object to the software entity (thus, methods, systems and computer program products for executing an applet within a first Java version of a Java Virtual Machine running on a client, wherein the applet includes at least one call to a second Java version object class, are provided, a request to activate an applet is made to a server hosting the applet from a client; which is readable as upon occurrence of the event, the method and parameter data execute to pass at least one of the computer object and reference to the computer object to the software entity)(see col. 2, lines 24-29).

(May 22, 2003 Office Action, at 8-9). Applicants disagree with the Examiner's characterization of *Marchesseault*, which merely discloses a system for allowing multiple Java versions to run on a single virtual machine. In particular, Applicants traverse the Examiner's position that *Marchesseault*'s disclosure of "verifying that each identified object class associated with the second Java version of the Java Virtual Machine has a respective identifier in the class interface" is the same as "event information identifying the event of interest and software information identifying a

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software entity to be notified upon occurrence of the event," as recited in claim 22. Instead, *Marchesseault* merely discloses an object class that includes an identifier, which permits the class interface to determine the Java version of an applet. There is simply no disclosure or suggestion in the cited portion of *Marchesseault*, or elsewhere, of an "event registration message" that includes "event information identifying the event of interest" or "software information identifying a software entity to be notified upon occurrence of the event," as recited in claim 22.

Moreover, *Ohtsuki* does not compensate for the deficiencies of *Marchesseault*. The Examiner has merely cited irrelevant lengthy portions of *Marchesseault*'s disclosure and alleged they are "readable" on recited claim elements.

Because neither reference teaches or suggests each claim recitation, there can be no finding of obviousness of claim 22 in view of the cited references. Further, as explained with respect to claim 5, *Marchesseault* with *Ohtsuki* fail to provide a suggestion that motivates one skilled in the art to combine the references to teach Applicants' claim invention. Accordingly, Applicants request the rejection of claim 22 be withdrawn and the claim allowed.

In view of the foregoing remarks, Applicants respectfully request the reconsideration of this application and the timely allowance of the pending claims.

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Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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